AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (New) Within a protective relay for an induction motor, a method of determining a trip point comprising the steps of:

determining I^2t values in the motor;

establishing a first thermal threshold value for a start condition of the motor;

determining a first thermal representation of a thermal condition of the motor during a start condition thereof;

comparing said first thermal representation with the first thermal threshold value, and producing an output signal when said first thermal threshold value is exceeded by said first thermal representation;

establishing a second thermal threshold value for a run condition of the motor, wherein the second thermal threshold value is lower than the first thermal threshold value and wherein the run condition of the motor is substantially cooler than the start condition of the motor;

determining a second thermal representation of the thermal condition of the motor during the run condition thereof;

comparing the second thermal representation with the second thermal value and for producing an output signal when said second thermal threshold value is exceeded by said second thermal representation; and

calculating a transition to the first thermal threshold value, resulting in a calculated transitioning thermal threshold value, wherein the calculated transitioning thermal threshold value is proportional to the motor I^2t value.

8. (New) The method of claim 7, wherein the step of calculating a transition to the first thermal threshold value includes the step of utilizing a fixed offset value of current, such that the calculated transitional thermal threshold value increases while transitioning from said fixed value, the calculated transitional thermal threshold value thus being always ahead of the motor I^2 value during normal operation of the motor.

9. (New) The method of claim 7, including the step of disregarding a transient current pulse to the motor such that said transient current pulse does not result in a transition to the start condition thermal threshold.

10. (New) The method of claim 8, wherein the first thermal threshold value, the second thermal threshold value, the first thermal representation, and the second thermal representation all are for a rotor portion of the motor.

11. (New) The relay of claim 8, wherein the step of determining the first thermal representation includes a representation of a heating effect within the rotor, a thermal capacity of the rotor, and a cooling effect of the rotor, and wherein the step of determining the second thermal representation includes a representation of the heating effect within the rotor, the thermal capacity of the rotor, and the cooling effect of the rotor.

12. (New) In a protective relay for an induction motor which includes a start condition thermal model, a run condition thermal model and a processing circuit for producing an output trip signal when trip thresholds associated with the thermal models are exceeded, wherein the relay includes a start condition trip threshold and a run condition trip threshold, the start condition trip threshold being higher than the run condition trip threshold, a method for transitioning the trip threshold from the run condition trip threshold to the start condition trip threshold, comprising:

determining I2t values in the motor; and

calculating a transition to the start condition trip threshold, resulting in a calculated trip threshold, wherein the calculated trip threshold follows the I^2t value until it reaches the established start condition trip threshold.